

**HIGH FREQUENCY HIGH VOLTAGE SILICON-ON-INSULATOR
DEVICE WITH MASK VARIABLE INVERSION CHANNEL AND
METHOD FOR FORMING THE SAME**

Abstract of the Invention

5 A high frequency high voltage semiconductor device having a shifted
doping profile and method for forming the same are provided. Specifically, the
present invention provides a semiconductor device (<250V) in which the doping
profile is shifted towards the source or body region of the device. The shift in
doping profile under the present invention allows both transconductance and
capacitance to be optimized so that a SOI device can operate at high frequencies.